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EXAMINER
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ROSWELL, MICHAEL

ART UNIT	PAPER NUMBER
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2173

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/904,457

Applicant(s)

SCHREIBER ET AL.

Examiner

Michael Roswell

Art Unit

2173

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-102 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-102 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-7, 10, 16, 23, 25-31, 34, 40-43, 51-57, 60, 66, 73, 75-81, 84, 90-93, 101, and 102 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang et al (U.S. Patent 5,950,190), hereinafter referred to as Chang.

In regards to claims 1, 25, 51, and 75, Chang teaches a repository of class and relation definitions for an information model and a plurality of repositories of instances of classes, wherein classes correspond to sets of instances having a common characterization, and relations correspond to inter-relationships between classes and serve to relate instances of one or more classes (taught as the definition of classes and relations and the ability of tables to contain attribute data values, at col. 3, lines 65-67 through col. 4, lines 1-20 and at col. 19, lines 38-44), a server for responding to queries relating to class and relation definitions in the repository (col. 9, lines 11-14, 19-24), and a graphical user interface including interactive icons for representing instances of classes (col. 13, lines 40-42), navigating from one instance to another via the relations (taught as the use of a foreign key in a relation to navigate from one table to another, at col. 4, lines 13-17), and wherein information about instances from more than one repository is graphically accessible from the same icon (taught as the mapping of multiple tables into one class, so they may be accessed through one icon, at col. 15, lines 1-34). Furthermore, Chang discloses the use of IDL files for storing generic class and relation

definitions in the repository (col. 17, lines 33-38) to go along with specific instances of classes stored in the repository. Chang also teaches the use of the invention in a distributed client/server environment with multiple repositories, and an embodiment of a single central Client Data Store Manager with a single ontology directory functioning as a global ontology directory (col. 6, lines 23-28).

In regards to claims 2, 26, 52, and 76, Chang describes the use of Persistent Identifiers (PID) and Object Identifiers (OID) to provide unique identification keys for all objects in the repository (col. 16, lines 58-64) and shows them linked to the icon of an instance (col. 16, line 40).

In regards to claims 3, 27, 53, and 77, with respect to claim 2, it can be seen that the PID and OID values are functions of the repository (col. 16, lines 55-57).

In regards to claims 4, 28, 54, and 78, Chang allows for the unique identifiers to be utilized in all tables and classes, which would include applicant's "largest class" (col. 16, lines 57-64).

In regards to claims 5, 29, 55, and 79, Chang associates an icon with an instance view or table (col. 11, lines 20-21).

In regards to claims 6, 30, 56, and 80, an icon is traditionally defined as a small image displayed on screen available for user manipulation. Chang shows such class icons in Figure 8,

and describes their interaction with a user (col. 10, lines 20-22).

In regards to claims 7, 31, 57, and 81, an icon is traditionally defined as a small image displayed on screen available for user manipulation. Chang shows the transition from the display of a class instance to that of a class icon (col. 13, lines 39-42).

In regards to claims 10, 34, 60, and 84, Chang discloses the appearance of a popup menu in response to a user clicking on a class icon, and includes in the menu items the ability to add or change attributes of the class (col. 10, lines 20-29).

In regards to claims 16 and 66, Chang shows in Figure 19 a collection of icons representing instances of classes.

In regards to claims 23 and 73, Chang shows in Figure 8 the presentation of subclass icons on the user interface.

In regards to claims 40, 43, 90, and 93, it can be seen in Figure 11 that Chang allows for the searching of given instances found in instance documents that are associated with an icon, and that the search results in Figure 12, where the instance, its icon and caption are displayed on screen (col. 13, lines 25-32).

In regards to claims 41 and 91, Chang discloses the appearance of a popup menu in response to a user clicking on a class icon, and includes in the menu items the ability to add or

change attributes of the class (col. 10, lines 20-29).

In regards to claims 42 and 92, if the "Attributes" item of the instance popup menu is selected, a sub-menu is activated which allows the user to add or change attributes pertaining to the selected instance (col. 10, lines 20-29).

In regards to claims 101 and 102, as the system and method of Chang is implemented on a computer, it must inherently include a computer readable medium providing executable computer instructions for carrying out the above system and method.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 11-14, 17-22, 35-38, 45, 50, 61-64, 67-72, 85-88, 95, and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Yeager et al (U.S. Patent 5,950,190), hereinafter referred to as Yeager.

In regards to claims 11, 35, 61, and 85, Chang teaches a repository of class and relation definitions (col. 19, lines 38-44), a server for responding to queries relating to class and relation definitions in the repository (col. 9, lines 11-14, 19-24), and a graphical user interface including icons for representing instances of classes (col. 13, lines 40-42). Chang also disclose a popup

menu in response to a user clicking on a class icon, and includes in the menu items the ability to add or change attributes of the class (col. 10, lines 20-29).

The difference between the claims and Chang is the claims recite a search tool for searching for functions within the class domain.

Yeager teaches a dynamic graphical user interface for relational database applications similar to the interface of Chang, and utilizing icons, classes, and repositories similar to applicant's claimed invention. Yeager further teaches a search tool for searching for functions within the domain of the class (Figure 4 and col. 10, lines 11-22).

It would have been obvious to one of ordinary skill in the art, having the teachings of Chang and Yeager before him at the time of the invention to modify the graphical user interface for data stores of Chang to include the function search tool of Yeager in order to obtain a user interface dealing with classes and instances of classes where the interface allows for searching within classes for specific functions.

One would be motivated to make such a combination for the advantage of performing queries on classes and instances of classes with a user-friendly interface, allowing for the user to access data without prior knowledge of query language. See Yeager, col. 9, lines 64-67 and col. 2, lines 6-13.

In regards to claims 12, 36, 62, and 86, and with respect to claim 11 above, Yeager discloses the access of the relational database and the data dictionary across a network (col. 20, lines 3-8), necessitating a function search over a network in that situation.

In regards to claims 13, 37, 63, and 87, and with respect to claim 11 above, Yeager shows a single repository for storing the relational database and data dictionary (col. 8, lines 21-31), therefore performing any search over a central repository.

In regards to claims 14, 38, 64, and 88, with respect to claim 11 above, Yeager shows the search tool searching for functions within the domain of the selected class (Figure 4, col. 10, lines 54-60), obtained through navigating the popup menu of Chang.

In regards to claims 17 and 67, Chang teaches a repository of class and relation definitions (col. 19, lines 38-44), a server for responding to queries relating to class and relation definitions in the repository (col. 9, lines 11-14, 19-24), and a graphical user interface including icons for representing instances of classes (col. 13, lines 40-42).

The difference between Chang and the claims is the claims recite a collection of instances defined by a logical term.

Yeager teaches a dynamic graphical user interface for relational database applications similar to the interface of Chang, and utilizing icons, classes, and repositories similar to applicant's claimed invention. Yeager further teaches the use of logical terms to define a collection of classes (Figure 4 and col. 10, lines 31-42).

It would have been obvious to one of ordinary skill in the art, having the teachings of Chang and Yeager before him at the time of the invention to modify the graphical user interface for data stores of Chang to include the refining of instances by way of a logical term.

One would be motivated to make such a combination for the advantage of obtaining a collection of instances having similar attribute values, and allowing the user to access specific information more quickly and easily. See Yeager, col. 11, lines 29-33.

In regards to claims 18 and 68, and with respect to claims 17 and 67above, Yeager shows the use of operators such as intersection, union, and minus to provide the logical term for the instance browser (col. 10, lines 42-45) to satisfy “instances specified for all but one parameter”.

In regards to claims 19 and 69, and with respect to claims 17 and 67, Yeager discloses the ability to search for instances of a class with values for any number of class related parameters (col. 10, lines 13-22).

In regards to claims 20 and 70, and with respect to claims 19 and 69above, Yeager discloses the access of the relational database and the data dictionary across a network (col. 20, lines 3-8), necessitating a function search over a network in that situation.

In regards to claims 21 and 71, and with respect to claims 19 and 69 above, Yeager shows a single repository for storing the relational database and data dictionary (col. 8, lines 21-31), therefore performing any search over a central repository.

In regards to claims 22 and 72, Yeager shows the use of mathematical modifiers to set bounds for the instance search tool (col. 10, lines 31-38).

In regards to claims 45 and 95, Yeager shows in Figure 4 the ability to define a collection, search for instance documents and tuples of the relation (col. 9-10, lines 63-67, 1-30), and have been shown *supra* to create icons for instances of classes.

In regards to claims 50 and 100, it can be seen in Figures 7-9 that Chang applies captions to the icons representing classes and instances of classes.

Claims 8, 9, 24, 32, 33, 44, 58, 59, 74, 82, 83, and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Tuli (U.S. Patent 6,003,034).

In regards to claims 8, 9, 32, 33, 58, 59, 82, and 83, Chang teaches a repository of class and relation definitions (col. 19, lines 38-44), a server for responding to queries relating to class and relation definitions in the repository (col. 9, lines 11-14, 19-24), and a graphical user interface including icons for representing instances of classes (col. 13, lines 40-42). An icon is traditionally defined as a small image displayed on screen available for user manipulation. Chang shows the transition from the display of a class instance to that of a class icon (col. 13, lines 39-42).

The difference between the claims and Chang is the claims recite the definition of the function from instances to images from within the repository, and in an alternative, the user selects from a plurality of functions.

Tuli discloses linking icons to data units for systems such as Database Management Systems and networks utilizing an object oriented approach to storing and retrieving data, similar to the instance browser of Chang. Tuli teaches the representation of icons from a standard group of repository attributes (col. 2, lines 3-6) and allows for the user to select an icon from an existing plurality (col. 1-2, lines 64-67, 1).

It would have been obvious to one of ordinary skill in the art, having the teachings of Chang and Tuli before him at the time of the invention to modify the instance browser with

image association of Chang with the ability to define the function from within the repository or be defined by the user as presented by Tuli to obtain an instance browser where instances are related to images either as defined by the instance repository or selectively by the user.

One would be motivated to make such a combination for the advantages of greater control over how instances are represented by icons in the instance browser, and allowing icons to have more relevance to instances. See Tuli, col. 1, lines 60-64.

In regards to claim 24, 44, 74, and 94, Chang teaches a repository of class and relation definitions (col. 19, lines 38-44), a server for responding to queries relating to class and relation definitions in the repository (col. 9, lines 11-14, 19-24), and a graphical user interface including icons for representing instances of classes (col. 13, lines 40-42).

Chang fails to disclose the use of a filter for separating instances, relations, or classes by authorship.

Tuli teaches a sort function similar to the disclosed filter for sorting files belonging to specific authors (col. 3, lines 28-32).

It would have been obvious to one of ordinary skill in the art, having the teachings of Chang and Tuli before him at the time of the invention to modify the instance browser of Chang to include the sorting/filtering feature of Tuli to obtain a browser capable of sorting information based on authorship.

One would have been motivated to make such a modification for the advantage of convenient user-based arrangement of data by specified attributes. See Tuli, col. 3, lines 25-27.

Claims 15, 39, 65, and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Wical.

In regards to claims 15, 39, 65, and 89, Chang teaches a repository of class and relation definitions (col. 19, lines 38-44), a server for responding to queries relating to class and relation definitions in the repository (col. 9, lines 11-14, 19-24), and a graphical user interface including icons for representing instances of classes (col. 13, lines 40-42), and the appearance of a popup menu in response to a user clicking on a class icon, and includes in the menu items the ability to add or change attributes of the class (col. 10, lines 20-29).

The difference between the claims and Chang is the claims recite the creation of icons for values of listed functions.

Wical describes the use of icons that include numbers for displaying how many documents are related to that specific category (col. 10, lines 23-33). In this case, the class of the instance browser would be the category presented, and the function of the class would be the number of related articles.

It would have been obvious to one of ordinary skill in the art, having the teachings of Chang and Wical before him at the time of the invention to modify the instance browser of Chang to include the value-specific icons of Wical to obtain an instance browser that displays specific values of functions of classes on screen.

One would be motivated to make such a combination for the obvious advantage of allowing the user to see information about a class or category without having to see all of the specifics of each class or category, and facilitating navigation of the data. See Wical, col. 11-12, lines 59-67, 1-9.

Claims 46-49 and 96-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Yeager as applied to claims 45 and 95 above, and further in view of Tuli.

Chang and Yeager have been shown *supra* to define a collection, search for instance documents and tuples of the relation (Yeager, col. 9-10, lines 63-67, 1-30), and have been shown *supra* to create icons for instances of classes.

Chang and Yeager fail to disclose the use of a filter for separating instance documents by authorship.

Tuli teaches a sort function similar to the disclosed filter for sorting files belonging to specific authors (col. 3, lines 28-32).

It would have been obvious to one of ordinary skill in the art, having the teachings of Chang and Tuli before him at the time of the invention to modify the instance browser of Chang to include the sorting/filtering feature of Tuli to obtain a browser capable of sorting information based on authorship.

One would have been motivated to make such a modification for the advantage of convenient user-based arrangement of data by specified attributes. See Tuli, col. 3, lines 25-27.

In regards to claims 47 and 97, and with respect to claims 46 and 96 above, Yeager discloses the access of the relational database and the data dictionary across a network (col. 20, lines 3-8), necessitating a function search over a network in that situation.

In regards to claims 48 and 98, and with respect to claim 46 and 96 above, Yeager shows a single repository for storing the relational database and data dictionary (col. 8, lines 21-31), therefore performing any search over a central repository.

In regards to claims 49 and 99, with respect to claim 46 and 96 above, Yeager shows the search tool searching for functions within the domain of the selected class (Figure 4, col. 10, lines 54-60), obtained through navigating the popup menu of Chang.

### ***Response to Arguments***

Applicant's arguments filed 25 January 2005 have been fully considered but they are not persuasive.

In response to applicant's argument that Chang fails to teach instances of a class, the examiner respectfully disagrees. As noted above, Chang teaches the ability of tables to contain attribute data values, at col. 3, lines 65-67 through col. 4, lines 1-20, thus teaching specific instances of classes.

### ***Conclusion***

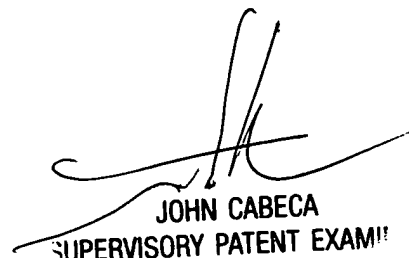
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Roswell whose telephone number is (571) 272-4055. The examiner can normally be reached on 8:30 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached on (571) 272-4048. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2173

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Roswell  
3/28/2005



JOHN CABECA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER